CLAIMS

Please AMEND claims 1, 4, 5, 7, 10, 15, 16, 18, 20-26 as follows. Claims 2, 3, 6, 8, 9, 11, 12, 13, 14, 17, 19 remain as originally filed.

1. (Currently Amended) A bioactive, biodegradable composite material comprising a fibrous composite of oxides and biodegradable polymers, wherein [~~the~~] fibers of the fibrous [~~component~~] composite comprise gel-like oxide materials with nanometer-sized pores.

2. (Original) The fibrous composite of claim 1, comprising silica and other oxides

3. (Original) The fibrous composite of claim 2, wherein the oxides, selected from the group consisting of SiO_2, TiO_2, ZrO_2 and Ta_2O_5, are bioactive and capable of inducing bone-like apatite growth.

4. (Currently Amended) The fibrous composite of claim 3, wherein silanol (Si-OH) and similar metal-OH groups form on [~~the oxide~~] of the oxide surfaces.

5. (Currently Amended) The fibrous composite of claim 1, [~~comprising~~] wherein the biodegradable polymers are selected from the group consisting of polylactic acid (PLA) and polyglycolic acid (PGA), poly(lactic-co-glycolic) acid (PLGA) copolymer, dextaran, collagen, poly(p-dioxanone), and poly(propylenefumarate), as well as mixtures thereof, [~~or~~] and co-polymers thereof.

6. (Original) The fibrous composite of claim 1, further comprising a drug or therapeutic composition to be delivered from the fibrous composite.

7. (Currently Amended) The fibrous composite of claim 6, wherein the drug or therapeutic composition comprises a native or recombinant bone morphogenic [~~proteins~~] protein or bone growth enhancing factor(s).

8. (Original) The fibrous composite of claim 1, comprising: (i) nanopores large enough to allow diffusion of ions and nucleation of apatite crystallites; (ii) mesopores that provide high bioactivity, (iii) macropores for tissue growth that resembles natural bone, (iv) good mechanical properties for handling and for initial support after implant, and (v) biodegradability for implant dissolution and time-varying mechanical properties.

9. (Original) The fibrous composite of claim 1, wherein the fibers are porous, and wherein a percentage ranging from at least 30%-90% of the porous fibers are hollow.

10. (Currently Amended) The fibrous composite of claim 9, [~~wherein the fibers are porous, and~~] wherein at least 50% of the porous fibers are hollow.

11. (Original) A controlled rate drug or therapeutic compound delivery composition, comprising the fibrous composite of claim 6 and the drug or therapeutic composition to be delivered at a controlled rate from the fibrous composition.

12. (Original) A method for preparing a bioactive, biodegradable fibrous composite material, comprising the steps of:

preparing a fibrous preform from a solid-in-oil-in-water emulsion comprising oxides and biodegradable polymers;

harvesting the fibrous preform, wherein the fibers comprise gel-like oxide materials with nanometer-sized pores;

exposing the fibrous preform to a solvent-based polymer solution; and

removing the solvent from the resulting bioactive, biodegradable fibrous composite material.

13. (Original) The method of claim 12, wherein the fibrous preform has a silica basis.

14. (Original) The method of claim 13, wherein the oxides, selected from the group consisting of SiO_2, TiO_2, ZrO_2 and Ta_2O_5, are bioactive and capable of inducing bone-like apatite growth.

15. (Currently Amended) The method of claim 14, further comprising forming silanol (Si-OH) and similar metal-OH groups on [~~the oxide~~] of the oxide surfaces.

16. (Currently Amended) The method of claim 12, wherein the biodegradable polymers are selected from the group consisting of polylactic acid (PLA) and polyglycolic acid (PGA), poly(lactic-co-glycolic) acid (PLGA) copolymer, dextaran, collagen, poly(p-dioxanone), and poly(propylenefumarate), as well as mixtures thereof, [~~or~~] and co-polymers thereof.

17. (Original) The method of claim 12, further comprising adding to the fibrous composition a drug or therapeutic composition to be delivered from the fibrous composite at a controlled rate.

18. (Currently Amended) The method of claim 17, wherein the drug or therapeutic composition comprises a native or recombinant bone morphogenic [~~proteins~~] protein or bone growth enhancing factor(s).

19. (Original) A method for inducing bone regeneration in an animal, comprising implanting into the animal the bioactive, biodegradable fibrous composite material of claim 1, having an appropriate size and shape to fit the site where bone regeneration is needed.

20. (Currently Amended) A method for delivering a drug or therapeutic composition in an animal, comprising administering to said animal at [~~the~~] a site needed, the bioactive, biodegradable composite material of claim 1.

[~~20~~] 21. (Currently Amended) A method for delivering a drug or therapeutic composition in an animal, comprising administering to said animal at [~~the~~] a site needed, the bioactive, biodegradable composite material of claim 7.

[~~21~~] 22. (Currently Amended) A method for inducing bone regeneration in an animal, comprising implanting into the animal the bioactive, biodegradable fibrous composite material prepared in accordance with claim 12, having an appropriate size and shape to fit [~~the~~] a site where bone regeneration is needed.

[~~22~~] 23. (Currently Amended) A method for delivering a drug or therapeutic composition in an animal, comprising administering to said animal at [~~the~~] a site needed, the bioactive, biodegradable composite material prepared in accordance with claim 16.

[~~23~~] 24. (Currently Amended) A method for delivering a drug or therapeutic composition in an animal, comprising administering to said animal at [~~the~~] a site needed, the bioactive, biodegradable composite material prepared in accordance with claim 17.

[~~24~~] 25. (Original Claim – Claim Number Currently Amended from 24 to 25) A method for 3-dimensional bone tissue engineering in bioreactors or other tissue culture devices comprising seeding the bioactive, biodegradable fibrous composite material of claim

[~~25~~] 26. (Original Claim – Claim Number Currently Amended from 25 to 26) A method for 3-dimensional bone tissue engineering in bioreactors or other tissue culture devices comprising seeding the bioactive, biodegradable fibrous composite material prepared in accordance with claim 12.